

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Tsai et al. Confirmation No.: 2750  
Application No.: 10/780,781 Group Art Unit: 1794  
Filed: February 18, 2004 Examiner: Elizabeth M. Cole  
For: *PROCESS FOR PREPARING AN ELASTIC NONWOVEN WEB*

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION UNDER 37 C.F.R. § 1.132 OF DE-SHENG TSAI**

Sir/Madam:

I, De-Sheng Tsai, do hereby declare and say as follows:

1. I am a named co-inventor on United States Application No. 10/780,781, entitled "Process for preparing an elastic nonwoven web" (hereinafter, "the '781 application"), filed February 18, 2004.

2. The subject matter of the '781 application was invented by Te-Hsin Tsai and me. Each of us is named as an inventor on the '781 application.

3. I have a doctorate in plant physiology from Penn State University in State College, PA, where I studied protein polymer chemistry. I am President and Chief Scientific Officer at VitaFlex, LLC, of Burlington, NC. I have been conducting research in the area of nonwoven elastication for 15 years and have authored or co-authored more than 8 publications in this area. My design of a strap-free mask was selected as a Visionary2004 finalist by INDA (Association of the Nonwoven Fabrics Industry) and over 20 million elastic nonwoven masks have been distributed in Japan and Taiwan. My achievements in the field of latex-free nonwoven elastication resulted in INDA's strong support for my application for permanent residence in the United States. The attached recommendation letter (Appendix A) from the INDA President is provided as evidence of my expertise in elastic nonwoven technologies.

*Tsai  
Feb 13, 2004*

4. In the '781 application, we describe non-woven webs formed from polypropylene fibers. In the field of non-woven fabrics, unless otherwise stated, the polypropylene in "polypropylene fibers" has a homogeneous cross-section in the solid-state. Therefore, a person working in the field of non-woven fabrics would have understood the '781 application as describing fibers whereby the polypropylene portion of the fibers is homogeneous in the cross-section in the solid state.

5. The polypropylene in the polypropylene fibers of the non-woven webs described in Examples 1-6 of the '781 application was homogeneous in the solid-state. The fibers of the spunbond, spun-meltblown-spunbond (SMS) and spunbond-meltblown-meltblown-spunbond (SMMS) non-woven webs used in the experiments described in Examples 1-6 of the '781 application were formed from commercially available polypropylene fibers that have a homogeneous cross-section in the solid-state. These fibers were not core-shell, islands-in-the-sea or side-by-side biconstituent fibers. The carded nonwoven webs described in Examples 1-6 of the '781 application were formed from fibers having a sheath of polyethylene and a core of polypropylene. However, the core of polypropylene was homogeneous in the cross-section in the solid-state.

6. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

  
\_\_\_\_\_  
De-Sheng Tsai

  
\_\_\_\_\_  
Feb. 03, 2010

Date: February 3, 2010



# Association of the Nonwoven Fabrics Industry

August 12, 2008

Department of Homeland Security  
U.S. Citizenship and Immigration Services  
St. Albans, VT

**Re: Extraordinary Ability Petition on behalf of Dr. De Sheng Tsai**

To Whom It May Concern:

I write this letter on behalf of Dr. De-Sheng Tsai of DuPont in support of the petition to classify him as an individual of extraordinary ability in the areas of Nonwovens and Elastic Structures.

At present, I am the President of INDA, The Association of the Nonwoven Fabrics industry. INDA has over 300 members representing the entire value chain of the Nonwovens and Engineered Fabrics Industry. Most of these companies are in the United States and many are among the Fortune 500. We are a very active organization that focuses on Educations Events, like conferences, trade shows, short courses and industry statistics. I, personally, have worked in this industry for over 35 years for large and small organizations, like Johnson & Johnson, the Polymer Group (PGI) and North Carolina State University. I have received Research awards from Johnson & Johnson and Extension awards for NCSU. I hold 6 patents in nonwovens art and have been called upon for expert testimony on two occasions during patent infringement suits.

I am familiar with the particular expertise attributable to Dr. De-Sheng Tsai as a result of his activities in the Nonwovens Industry. Dr. Tsai was a finalist at our Vision Conference with the submission of the EasyMask concept. Dr. Tsai continues to be active in our industry with the development of latex-free elastic spunlace technology. The combinations of melt spinning and spunlace technologies have produced fabrics that have knit-

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like hand and stretchable characteristics. These fabrics are truly novel in our industry and are of great value when producing consumer products that require fit and comfort. Baby diapers as well as feminine hygiene and incontinence products will be greatly improved with Dr. Tsai's developments. I can see the day in our future where these developments will expand into medical applications, fashion apparel, furniture and home furnishings.

It is my opinion that he qualifies for this distinction for the following reasons. Dr. Tsai's work in latex-free elastic structures will open new opportunities for the Nonwoven Industry, around the world. Our industry is driven by technology and innovation. It is the type of work that Dr. Tsai is doing that increases our worldwide sales by 8% a year. We need these innovations to fuel this growth. Because he is using fairly standard equipment but novel materials, many manufacturers could produce these products, of course with licenses from DuPont. Flame retardant elastic covers are in development for first responders and other critical service providers. This technology may be well suited for export opportunities; we currently export about 17% of all of our North American production.

In my judgment Dr. De-Sheng Tsai has successfully reached a position in his career that places him well above other senior figures in the field and whereby he is considered a foremost expert. I fully support that Dr. De-Sheng Tsai be approved for this classification.

Sincerely,



Rory Holmes  
President  
INDA

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